



Longfield Solar Farm

Other Documents [PINS Ref: EN010118]

Grid Connection Statement

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Longfield Solar Energy Farm Ltd

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Executive Summary

This Grid Connection Statement has been prepared in respect of an application for a Development Consent Order (DCO) for the construction, operation (including maintenance) and decommissioning of Longfield Solar Farm (the Scheme). The Scheme consists of a solar photovoltaic (PV) array electricity generating facility, Battery Energy Storage System (BESS) and export connection to the national electricity transmission network (NETS), including extension of the existing Bulls Lodge Substation.

The Scheme is defined under the Planning Act 2008 as a Nationally Significant Infrastructure Project (NSIP) as it comprises a generating station in England with a capacity exceeding 50 megawatts (MW). It therefore requires a DCO from the Secretary of State for Business, Energy and Industrial Strategy (the Secretary of State). This Grid Connection Statement has been prepared on behalf of Longfield Solar Energy Farm Ltd (the Applicant) to support the DCO application and should be read in conjunction with the other documents submitted with the Application. The Applicant is a joint venture between EDF-Renewables and Padero Solar.

This Grid Connection Statement is submitted pursuant to Regulation 6(1)(a)(i) of the APFP Regulations, which requires the Applicant to state who will be responsible for designing and building the connection to the electricity grid from the Scheme.

This Statement provides confirmation to the Secretary of State that a connection to the Bulls Lodge Substation will be provided via 400kV underground cables from the Longfield Solar Farm. The Bulls Lodge Substation will be extended in order to accommodate this. The Bulls Lodge Substation Extension forms part of the Scheme and the Applicant has, or will have, the ability to procure the necessary land and rights in order to undertake the necessary works to connect the Solar Farm to Bulls Lodge Substation. This is stipulated in the **draft DCO Order [EN010118/APP/3.1]**. The Grid Connection and the extension to Bulls Lodge Substation form part of the Scheme for which development consent is being sought.

1. Introduction

1.1 Introduction

- 1.1.1 This Grid Connection Statement (the Statement) has been prepared by Longfield Solar Energy Farm Limited (the Applicant) as part of an application for a Development Consent Order (DCO) for the construction, operation (including maintenance) and decommissioning of Longfield Solar Farm (the Scheme). The Scheme consists of a solar photovoltaic (PV) array electricity generating facility, Battery Energy Storage System (BESS) and export connection to the national electricity transmission network (NETS), including extension of the existing Bulls Lodge Substation. The application for the DCO (the Application) is submitted to the Planning Inspectorate, with the decision whether to grant a DCO being made by the Secretary of State for Business, Energy and Industrial Strategy (the Secretary of State) pursuant to the Planning Act 2008 (PA 2008).
- 1.1.2 The Scheme is defined under the Planning Act 2008 as a Nationally Significant Infrastructure Project (NSIP) as it comprises a generating station in England with a capacity exceeding 50 megawatts (MW). It therefore requires a DCO from the Secretary of State. This document has been prepared on behalf of the Applicant to support the DCO application and should be read in conjunction with the other documents submitted with the Application. The Applicant is a joint venture between EDF-Renewables and Padero Solar. A detailed description of the Scheme is included in **Chapter 2, The Scheme**, of the **Environmental Statement (ES) [EN010118/APP/6.1]**.

1.2 Purpose and Structure of this Statement

- 1.2.1 This Statement is part of a suite of documents which must accompany the Application pursuant to Section 55 of the Planning Act 2008 and Regulations 5 and 6 of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (APFP Regulations).
- 1.2.2 This Statement has been prepared in accordance with Regulation 6(1)(a)(i) of the APFP Regulations, which requires an applicant for a DCO in respect of an onshore generating station to provide a statement of who will be responsible for designing and building the connection to the electricity grid.
- 1.2.3 The Statement is structured as follows:
- Section 1: Introduction;
 - Section 2: Grid Connection Agreement;
 - Section 3: Elements of Grid Connection;
 - Section 4: Responsibilities for Designing and Building the Grid Connection;
 - Section 5: Acquisition of Land Rights;
 - Section 6: Consent for the Grid Connection Works;
 - Section 7: Conclusion.

1.3 Work Numbers

- 1.3.1 'Work Nos.' are referred to throughout this Grid Connection Statement. These refer to Schedule 1 of the **Draft DCO [EN010118/APP/3.1]**. The **Draft DCO [EN010118/APP/3.1]** should be referred to for the precise terminology and full details of each Work number.
- 1.3.2 The location of each Work number is defined by the **Works Plans [EN010118/APP/2.2]**.
- 1.3.3 The work numbers particularly relevant to the NGET grid connection site, and the 400kv grid connection route are as follows:
- Work No. 3: Longfield Substation
 - Work No. 4: Grid Connection Route
 - Work No. 5: Bulls Lodge Substation Extension
- 1.3.4 The above works will form the infrastructure that is used to transport the electricity from Work No. 1, the Solar Photovoltaic Generating Station, and Work No. 2, the Battery Energy Storage System, to the NETS.

2. Grid Connection Agreement

- 2.1.1 The Applicant has received a grid connection offer from National Grid Electricity System Operator Limited (NGESO) to connect the Scheme to the NETS. NGESO are the system operator for the NETS, and as such are the body of National Grid able to make connection offers. National Grid Electricity Transmission (NGET) operate as transmission owners, and as such NGET are the body of National Grid responsible for owning and operating the Bulls Lodge Substation Extension, should the DCO receive consent.
- 2.1.2 The grid connection offer to the Applicant was originally received in April 2019. Subsequently a re-offer was received in August 2019, following post offer discussions and negotiations (NGESO reference A/CONS/19/1-1EN(0)). This re-offer was accepted by the Applicant. The re-offer defines a contract for the connection of a directly connected power station. The accepted offer provides for a Transmission Entry Capacity (TEC) of 500MW (average MW taken over a half-hour period).
- 2.1.3 Engagement with NGESO has continued since 2019, and at the time of DCO application submission, the Applicant and NGESO are finalising details of the connection agreement, with the expectation that a final ATV (Agreement To Vary) will be completed prior to DCO examination.
- 2.1.4 As such the Applicant confirms that the output of Work No. 1, the Solar Photovoltaic Generating Station, and Work No. 2, the Battery Energy Storage System, will be exported to the NETS, via the Bulls Lodge Substation Extension, owned and operated by NGET.

3. Elements of Grid Connection

3.1 Introduction

3.1.1 The electricity generated by the Scheme will be exported to the NETS via a new below ground grid connection cable located within the Grid Connection Route (Work No. 4). This will connect the new Longfield Substation (Work No. 3) with the Bulls Lodge Substation Extension (Work No. 5).

3.1.2 The Works Areas where the following Works will be located are identified by the **Works Plans [EN010118/APP/2.2]**:

- Proposed Longfield Substation (Work No. 3)
- Proposed Grid Connection Route (Work No. 4)
- Proposed Bulls Lodge Substation Extension (Work No.5)

3.2 Longfield Substation (Work No. 3)

3.2.1 The Longfield Substation will convert electricity generated and stored by **The Solar Farm Site** to 400kV for onward transmission to the National Grid via the Grid Connection Route and the Bulls Lodge Substation Extension.

3.2.2 The Longfield Substation will contain the following main components:

- substation, switch room buildings and ancillary equipment including reactive power units;
- control building housing offices, storage and welfare facilities;
- monitoring and control systems for this Work No. 3 and Work Nos. 1 and 2 housed within the control building in Work No. 3(b) or located separately in their own containers or control rooms;
- 400 kilovolt harmonic filter compound; and
- electrical cables including electrical cables connecting to Work No. 2.

3.3 Grid Connection Route (Work No. 4)

3.3.1 A single 400 kV cable circuit consisting of three cables will run underground from Longfield Substation (Work No 3) north of Toppinghoehall Wood, to the Bulls Lodge Substation Extension (Work No 5), to the south west.

3.3.2 The Grid Connection Route will contain the following main components:

- An underground 400kV cable circuit (Work No. 4A(i)), consisting of:
 - An underground cable trench approximately 3m wide and 3m deep
 - A 5m offset from the centreline of the buried trench on both sides, providing adequation operational corridor for protection and maintenance
 - Three 400kV cables in ducts, within the buried trench width
 - Berms either side of the buried trench
 - Yellow marker warning tape the full length of the trench

- Geotextile & geogrid linings of the trench and trench top
- laying down of internal access tracks, ramps, means of access, footpaths, roads, including the laying and construction of drainage infrastructure, signage and information boards (Work No. 4A(ii)); and
- Work No. 4B - temporary construction laydown areas.

3.4 Bulls Lodge Grid Substation Extension (Work No. 5)

3.4.1 The existing Bulls Lodge Substation is located on land to the north east of the A12 Boreham Interchange at the Bulls Lodge Substation Site.

3.4.2 The Bulls Lodge Substation Extension is located on land directly to the west of the existing Bulls Lodge Substation as set out in the **Works Plans [EN010118/APP/2.2]** corresponding with Work Area No 5.

3.4.3 The Bulls Lodge Substation Extension will include the following:

- Work No. 5A – an electricity switching station including:
 - a main substation building to include an indoor gas insulated switchgear (GIS) switch hall, ancillary plant rooms, amenities block, storage and workshop units;
 - outdoor air insulated (AIS) switchgear, GIS busbars, two overhead line gantries and associated foundations and structures;
 - a new permanent access road from the existing private road including a new bellmouth entrance;
 - internal roadways and footpaths;
 - earthworks;
 - car parking area;
 - lighting columns and lighting;
 - perimeter fencing and security cameras;
 - drainage system and a new drainage outfall to Boreham Brook; and
 - new connections from pylons 4VB061A and 4VB061B including pylon modifications;
- Work No. 5B – temporary overhead line alterations including two new temporary pylons and realignment of the existing 400kV overhead line.

3.4.4 The construction, operation and (where relevant) decommissioning of all elements of the Grid Connection have been assessed as part of the Environmental Impact Assessment which is reported by the **ES [EN010118/APP/6.1]**.

3.4.5 The construction, operation and (where applicable) decommissioning all elements of the Grid Connection will be undertaken (respectively) in accordance with the **Outline Construction Environmental Management Plan [EN010118/APP/7.10]**, the **Outline Operational Environmental Management Plan [EN010118/APP/7.11]**, the **Decommissioning Strategy [EN010118/APP/7.12]**.

4. Responsibilities for Designing and Building the Grid Connection

4.1 Responsibilities of Longfield Solar Energy Farm Limited

4.1.1 The Applicant and its appointed contractors will be responsible for designing and building the following elements of the grid connection:

- Longfield Substation (Work No. 3)
- Grid Connection Route (Work No. 4)

4.2 Responsibilities of National Grid Electricity Transmission

4.2.1 National Grid Electricity Transmission (NGET) will be responsible for designing and building the following elements of the grid connection:

- Bulls Lodge Substation Extension (Work No. 5A)

4.2.2 NGET will also be responsible for the following temporary work, which is required to construct the Bulls Lodge Substation Extension:

- temporary construction laydown area in connection with Work No. 5 (Work No. 7B)
- Bulls Lodge Substation Extension (Work No. 5B)

5. Acquisition of Land Rights

5.1 Solar Farm Site

5.1.1 As shown in Schedule of Negotiations and Powers Sought [EN010118/APP/4.4], the Applicant has successfully negotiated a voluntary option agreement for a leasehold interest to allow for the construction, operation and decommissioning (as applicable) of **The Solar Farm Site**.

Grid Connection & Bulls Lodge Substation

5.1.2 Negotiations for the purchase of land, rights and interests are ongoing in respect of any new rights required for the Scheme where voluntary agreement has not yet been reached. It is necessary for the Applicant to seek compulsory acquisition powers to secure such land, rights and interests and to ensure that any third-party interests or encumbrances affecting such land, rights and interests may be acquired, overridden or extinguished pursuant to the draft DCO, thereby ensuring that the Scheme can be constructed, operated and maintained.

5.2 Grid Connection Route

5.2.1 As set out in the Schedule of Negotiations and Powers Sought, freehold owners of the proposed cable route (Work No. 4A) have received Heads of Terms and the Applicant is continuing to negotiate with the owners. It is hoped that agreements will be reached voluntarily in due course.

5.3 Bulls Lodge Substation

5.3.1 The Applicant currently does not have the necessary property interests to construct, operate and maintain the Grid Connection or the Bulls Lodge Substation Extension.

5.3.2 The majority of the land required for the Bulls Lodge Substation Extension is located on land owned and operated by National Grid. Article 33 of the DCO will give the benefit of Work Nos. 5, 7B and 9 (to the extent work number 9 is to facilitate access to work numbers 5 and 7B) to National Grid in order to construct and operate the Bulls Lodge Substation Extension. There is a small area of land required permanently for the extension to the substation that is outside of National Grid's ownership.

5.3.3 As set out in the Schedule of Negotiations and Powers Sought, freehold owners of the additional land required to facilitate the Bulls Lodge Substation Extension have received Heads of Terms and the Applicant is continuing to negotiate with the owners. The Applicant will continue to endeavour to purchase the land under a voluntary agreement.

6. Consent for the Grid Connection Works

6.1.1 The Grid Connection, comprising the Longfield Substation (Work No. 3), the Grid Connection Route (Work No. 4), and the Bulls Lodge Substation Extension (Work No. 5) forms part of the Scheme for which development consent is being sought via the DCO Application.

6.1.2 As such, if the same terms as those set out in the **draft DCO [EN010118/APP/3.1]** are granted, development consent for the Grid Connection as laid out in section 1.3.4, 1.3.5, and 1.3.6, will have been secured.

7. Conclusion

7.1.1 Longfield Solar Energy Farm Limited is required to submit a statement pursuant to Regulation 6(1)(a)(i) of the APFP Regulations, stating who will be responsible for designing and building the connection to the electricity grid.

7.1.2 It is considered that this Grid Connection Statement provides confirmation to the Secretary of State of the requirement above, namely:

- The Applicant has received a grid connection offer from NGEN to connect the Scheme to the NETS and that offer has been accepted.
- a connection to the Bulls Lodge Substation Extension will be provided via a single circuit 400kV underground cable from the Longfield Substation, within the Solar Farm Site;
- The Applicant will be responsible for designing and building the Longfield Substation (Work No. 3) and the Grid Connection Route (Work No. 4). NGET will be responsible for designing and building the Bulls Lodge Substation Extension (Work No. 5)
- The Applicant has, or will have, the ability to procure the necessary land and rights in order to upgrade the Bulls Lodge National Grid Substation to accommodate the Grid Connection; and
- As stipulated in the **draft DCO [EN010118/APP/3.1]**, the Grid Connection forms part of the Scheme for which development consent is being sought.